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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

FLEURANTIN, JEAN B

ART UNIT	PAPER NUMBER
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2162

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/827,738

Applicant(s)

RICHARD HANS HARVEY

Examiner

JEAN B. FLEURANTIN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-28 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119


- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____


SHAHID ALAM
PRIMARY EXAMINER

DETAILED ACTION

Response to Amendment

1. This is in response to Applicant(s) arguments filed on 17 February 2005.
Claims 1-28 remain pending for examination.

Response to Applicant' Remarks

2. Applicant's arguments filed 17 February 2005 have been fully considered but they are not persuasive for the following reasons, see sections A and B.

Claim Rejections - 35 USC § 103

- A. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12, 14-17 and 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over C.M.R. Leung (GDSA: An X.500 Directory Implementation Supporting Heterogeneous Databases – 1991" (hereinafter "Leung").

As per claims 1 and 14, Leung discloses, "a method of arranging data in a database" (page 85, lines 16-19) comprising:

"creating a first table adapted for storing the data and having one row for each data entry" as the DIT table holds the information of the structure of the DIT, each

record contains the system identifier of an object that of its parent, (see page 88, lines 14-16). Leung does not explicitly disclose step of creating a second table adapted for storing data components and having one row for each component of the data. However, Leung discloses tow relational tables DIT and ENTRY, the ENTRY table holds detailed information about each directory, each record holds the system identifier of an object and an attribute value of an attribute type of the object in both normalized and raw forms, (see page 88, lines 17- 19). It would have been obvious to one ordinary skill in the art at the time the invention was made to modify of Leung with steps of creating a second table adapted for storing data components and having one row for each component of the data. Such modification would allow the teachings of Leung to provide a complete set of operations that can only be used to manipulate objects stored in the structural part, (see Leung, page 88, lines 3-4).

As per claims 2 and 15, Leung discloses, "wherein the data is a structured data type" as the ENTRY table holds detailed information about each directory each record holds the system identifier of an object, (see page 88, lines 17-19).

As per claims 3 and 16, Leung discloses, "wherein the data is a string data type" as the parameters are in a form that is independent of the storage structures of both DIT and ENTRY, if the function succeeds it returns the results if any, (see page 89, lines 18-20).

As per claim 4, Leung discloses, "wherein the data is or represents a X.509 certificate" as DSEP decodes the request and passes the decoded request in the form of Directory Abstract Services with the appropriate parameters to DOP, when DOP finishes processing the request and returns the result to DSEP, DSEP encodes the results and sends it through the established connection back to the requesting DUA (see figure 1, page 87, lines 9-13).

As per claims 5 and 26, Leung discloses, "wherein the component data is a checksum or fingerprint" as a means for collecting the results it passes them to DSEP in the form of directory abstract services results, the results may be positive or negative, negative results occur when errors are added detected during processing of the user requests, (see page 87, lines 16-20).

As per claims 6 and 23, Leung discloses, "where the database is a pm of an electronic directory services system" as the database systems used form an indispensable part of the directory systems, (see page 85, lines 23-24).

As per claims 7 and 24, Leung discloses, "where the electronic directory services system comprises an X.500 and LDAP services system" as an X.500 directory consists of one or more distributed Directory System Agents where directory information is kept and user requests are proposed, the DIT and DD 'Directory Information' are partitioned and distributed in these DSAS each DSA also holds knowledge of the

distribution of the DIT 'Directory Knowledge', all requests in the form of directory abstract services from directory users must be submitted through Directory User Agents acting as the interface between the users and the X.500 directory, DUAS use the Directory Access Protocol 'DAP' to communicate with DSAS to allow for uniform distributed processing of user requests communication between a pair of DSAS is governed by the Directory System Protocol, (see page 86, lines 35-44).

As per claim 8, Leung discloses, "a database having a data storage arrangement, comprises a search table containing at least one row having a plurality of columns" as the structural part of DIBP consists of two objects, the DIT and ENTRY stored as two relational tables the DIT table holds the information of the structure of the DIT, each record contains the system identifier of that of its object that of its parent and its RDN, the RDNs are coded in such a way that matching them can be done efficiently, the ENTRY table holds detailed information about each directory object, each record holds the system identifier of an object and an attribute value of an attribute of the object in both normalized, (see page 88, lines 14-20); and

"a subsearch table containing at least one row having a plurality of columns including a component identifier column" as the ENTRY table holds detailed information about each directory object, each record holds the system identifier of an object and an attribute value of an attribute of the object in both normalized, (see page 88, lines 17-19).

As per claims 9 and 10, in addition to claim 8, Leung discloses, "wherein the columns of the search table are in the form "ED, AID, VID, Norm", where EID identifies an object to which a value belongs, Am identifies an attribute type of the value, and VID identifies one of a possible number of attribute values in the one entry, and CD identifies the component identifier" as the ENTRY table holds detailed information about each directory object, each record holds the system identifier of an object and an attribute value of an attribute type of the object in both normalized and raw forms, (see page 88, lines 15-19).

As per claim 11, in addition to claim 8, Leung further discloses, "a subattribute table containing at least one row having a plurality of columns in which a description or reference to the subsearch table is provided" as the ENTRY table holds detailed information about each directory object, each record holds the system identifier of an object and an attribute value of an attribute of the object in both normalized, (see page 88, lines 17-19).

As per claim 12, in addition to claim 11, Leung discloses, "wherein the columns of the subattribute table are in the form &CID, SYN, DESC, OBJECT ID, FLAGS" (see figure 4b, page 88, lines 14-18).

As per claim 17, Leung discloses, "a system, being an X.500 or LDAP directory services system" as an X.500 directory consists of one or more distributed Directory

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System Agents (DSAs) where directory information is kept and user requests are proposed, the DIT and DIB (Directory Information) are partitioned and distributed in these DSAS each DSA also holds knowledge of the distribution of the DIT (Directory Knowledge), all requests in the form of directory abstract services from directory users must be submitted through Directory User Agents acting as the interface between the users and the X.500 directory DUAS use the Directory Access Protocol (DAP) to communicate with DSAS to allow for uniform distributed processing of user requests communication between a pair of DSAS is governed by the Directory System Protocol (DSP), (see page 86, lines 35-44).

As per claim 22, in addition to claim 1, Leung discloses, "determining a component of a given data entry" as adds a new entry (see page 89, line 6);

"executing one of an exact or initial matching on the second table in order to locate the component" as the RDNs are coded in such a way that matching them can be done efficiently, (see page 88, lines 15-19); and

"returning the given data entry matching the component located" as each record holds the system identifier of an object and an attribute value of an attribute type of the object in both normalized and raw form, the normalized values allow efficient value matching of all attribute types through the use of standard SQL query language, (see page 88, lines 15-20).

As per claim 25, in addition to claim 4, Leung discloses, "a check sum of the data and or a fingerprint of the data" as a means for collecting the results it passes them to DSEP in the form of directory abstract services results, the results may be positive or negative, negative results occur when errors are added detected during processing of the user requests, (see page 87, lines 16-20).

As per claim 27, Leung discloses a method, "wherein the search is conducted using a search table to locate the fingerprint or checksum" as a means for collecting the results it passes them to DSEP in the form of directory abstract services results, the results may be positive or negative, negative results occur when errors are added detected during processing of the user requests, (see page 87, lines 16-20).

As per claim 28, Leung further discloses, "wherein components of the checksum or fingerprint are searched" as a means for collecting the results it passes them to DSEP in the form of directory abstract services results, the results may be positive or negative, negative results occur when errors are added detected during processing of the user requests, (see page 87, lines 16-20).

Claims 13 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over C.M.R. Leung (GDSA: An X.500 Directory Implementation Supporting Heterogeneous Databases – 1991" (hereinafter "Leung") in view of Paul Barker ('An

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Analysis of User Input to an X.500 White Page Directory Service" - 1995, (hereinafter Barker").

As per claims 13 and 18, in addition to claim 1, Leung discloses the claimed subject matter except the claimed a third table directed to one or more selected components of values and configured to have one row for each component of each value. However, Barker discloses table III gives a breakdown of how the data matched these categories, (see table III, page 116, lines 5-6) and page col. 1, paragraph 3 to col. 2, paragraph 2). It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the combined teachings of Leung and Barker with a third table directed to one or more selected components of values. Such modification would allow the teachings of Leung and Barker to improve the accuracy of the directory searching methods and systems; and to provide alternative names for directory entries, (see page 124, paragraph 4, lines 4-5).

As per claim 19, Leung discloses, "wherein the data is a structured data type" as the parameters are in a form that is independent of the storage structure of both DIT and ENTRY, (see page 89, lines 18-19).

As per claim 20, Leung discloses, "wherein the data is a string data type" as the parameters are in a form that is independent of the storage structure of both DIT and ENI-RY if the function succeeds it returns the results if any, (see page 89, lines 18-20).

As per claim 21, Leung discloses, "being an X.500 or LDAP directory services system" as an X.500 directory consists of one or more distributed Directory System Agents where directory information is kept and user requests are proposed, the DIT and DIB (Directory Information) are partitioned and distributed in these DSAS each DSA also holds knowledge of the distribution of the DIT 'Directory Knowledge', all requests in the form of directory abstract services from directory users must be submitted through Directory User Agents acting as the interface between the users and the X.500 directory, DUAS use the Directory Access Protocol 'DAP' to communicate with DSAs to allow for uniform distributed processing of user requests communication between a pair of DSAs is governed by the Directory System Protocol DSP); (see page 86, lines 35-44).

B. In response to applicant's argument, page 4, paragraph 5, that "The Office Action contends that Barker TABLE III obviates the use of a third table in independent claim 13. However, it is respectfully submitted that Barker TABLE III is an illustrative device and does not represent a table of a database." the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a

reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Therefore, Leung does not explicitly disclose step of creating a second table adapted for storing data components and having one row for each component of the data. However, Leung discloses two relational tables DIT and ENTRY, the ENTRY table holds detailed information about each directory, each record holds the system identifier of an object and an attribute value of an attribute type of the object in both normalized and raw forms, (see page 88, lines 17- 19). It would have been obvious to one ordinary skill in the art at the time the invention was made to modify of Leung with steps of creating a second table adapted for storing data components and having one row for each component of the data. Such modification would allow the teachings of Leung to provide a complete set of operations that can only be used to manipulate objects stored in the structural part, (see Leung, page 88, lines 3-4).

Applicant(s) stated, page 3, paragraph 2, that "The Applicant respectfully disagrees. The DIT table in Leung relates directory objects in a hierarchical fashion while the second table of claim 1 is adapted for storing data components and having one row for each component of the data. The Applicant fails to see how the presence of a DIT table relating directory objects in a hierarchical fashion obviates the creation of a second table for storing data components and having one row for each component of the data. Accordingly there does not appear to be any teaching or suggestion within Leung of a second table for storing data components and having one row for each component of the data." It is respectfully submitted that Leung discloses DIT and ENTRY, stored as two relational tables. DIT table holds the information of the DIT.

Where, the ENTRY table hold detailed information about each directory object, each record holds the system identifier of an object and an attribute value of an attribute type of the object in both normalized and raw forms (see page 88, paragraph 3).

MPEP 2111 Claim Interpretation; Broadest Reasonable Interpretation

During patent examination, the pending claims must be "given the broadest reasonable interpretation consistent with the specification" Applicant always has the opportunity to amend the claims during prosecution and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 162 USPQ 541,550-51 (CCPA 1969). The court found that applicant was advocating ... the impermissible importation of subject matter from the specification into the claim. See also In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997) (The court held that the PTO is not required, in the course of prosecution, to interpret claims in applications in the same manner as a court would interpret claims in an infringement suit. Rather, the "PTO applies to verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definition or otherwise that may be afforded by the written description contained in application's specification.").

The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. In re Cortright, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999).

For the above reasons, it is believed that the last Office Action was proper.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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CONTACT INFORMATION

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEAN B. FLEURANTIN whose telephone number is 571 – 272-4035. The examiner can normally be reached on 7:05 to 4:35.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BREENE can be reached on 571 – 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jean Bolte Fleurantin

Patent Examiner

Technology Center 2100

May 01, 2005


SHAHID ALAM
PRIMARY EXAMINER